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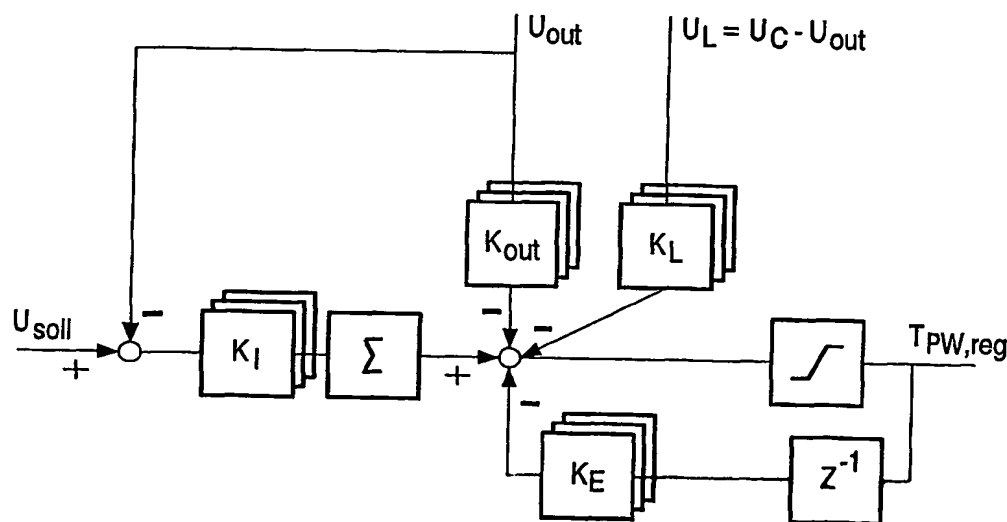
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(54) Title: DIGITAL STATE CONTROLLER FOR A HIGH-VOLTAGE GENERATOR USING THE MIXED-MODE MODULATION METHOD



(57) Abstract: A description is given of a power supply unit, an X-ray device having a power supply unit, and a method of controlling a power supply unit. In order also to control non-linear control paths, such as of a power supply unit operated with mixed-mode modulation, it is proposed that the control device be designed as a digital control device which calculates at least one correcting variable. The control device processes at least a first actual value  $U_{out}$ , which depends on the output voltage. A time difference value is calculated from two sample values of the first actual value  $U_{out}$  and is multiplied by a first controller coefficient  $K_{out}$ . The value of the first controller coefficient can in this case change as a function of the operating point of the power supply unit.

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